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10/565,632	06/30/2006	Claudio Lacagnina	07040.0246	6141

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EXAMINER
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KNABLE, GEOFFREY L

ART UNIT	PAPER NUMBER
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1791

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,632	<b>Applicant(s)</b> LACAGNINA ET AL.	
	<b>Examiner</b> Geoffrey L. Knable	<b>Art Unit</b> 1791	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-55 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26, 29, 30 and 32-55 is/are rejected.
- 7) ☒ Claim(s) 27, 28 and 31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/24/06; 6/7/07; 9/25/08</u> . | 6) <input type="checkbox"/> Other: ____.  |

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1. Claims 39-55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the last line of claim 39, by not defining the conditions under which the proximal half is fixed, the scope of the claim is arguably ambiguous. In particular, since the proximal half of a drum is fixed with respect to a support structure even for a standard shaping drum that is designed such that both halves of the drum move toward one another (i.e. it is fixed for such a drum at all times other than when the drum is actually axially expanding or contracting), whereas it would not seem that such is intended, the scope of this requirement is indefinite. It is suggested that the conditions under which this is fixed (e.g. "during..." as set forth in claim 26) be more explicitly defined to avoid this ambiguity. For purposes of the prior art rejections to follow, claim 39 will be read as requiring that the proximal half is fixed relative to the support structure at all times, including during moving the distal and proximal halves mutually close, but clarification is required.

Claim 41, lines 4+ define that the "control unit causes..." certain defined movements. The scope of this requirement is however arguably ambiguous as it is not clear if this represents required programming or merely a capability of any broad programmable controller. It has been assumed for purposes of this office action that this is intended to require that the control unit actually is programmed to cause the defined movements but it would be clearer if more positively defined as such (much as in claim 42 which defines that the "control unit is programmed...").

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2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 26, 29, 30, 36, 39 and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) taken in view of at least one of [Held et al. (US 3,929,540), Loeffler (US 4,805,872) and Frazier (US 2,986,196)].

Takagi discloses a method for producing a tire for a vehicle wheel, comprising: disposing a carcass structure (51), having a cylindrical-sleeve shape, on a drum (75) having a distal half and a proximal half; disposing a belt structure (70) coaxially around the carcass structure and then converting the shaping drum from a building condition to a shaping condition until an intermediate portion of the carcass structure contacts an inner surface of the belt structure (e.g. paragraph [0073]); and transferring the drum, in the shaping condition, to a vicinity of at least one application unit (e.g. paragraph

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[0074]); wherein the distal and proximal halves are both carried by a support structure (note cantilever drum support in fig. 4), and wherein the at least one unit applies at least one elongated element of elastomeric material, in circumferential coils, to form at least one component of the tire external to the carcass structure (note esp. paragraph [0119] which indicates that all the rubber components, including the “side treads” (that are applied to the shaped drum (75)), can be formed by winding narrow ribbons). Takagi therefore discloses a method as claimed in claim 26 except that specifics of the internal drum structure are not provided.

As to the claimed specifics of the drum structure used to shape the carcass into the belt, and especially where the drum proximal half is fixed during moving the two halves together during shaping, Held et al., Loeffler and Frazier are cited. In particular, each of Held et al. (esp. col. 5, lines 21-35 and figs. 6-8; note also col. 6, lines 40-49), Loeffler (esp. col. 4, lines 61+ and fig. 3) and Frazier (esp. col. 4, lines 69+) disclose a cantilevered tire building/shaping drum where the shaping operation is effected by inflating the tire carcass while moving the distal drum half towards a relatively fixed proximal drum half. Such an operative motion to effect the required shaping is therefore well known in this art to be a suitable and effective and would have been an obvious operative motion to provide the shaping desired by Takagi, only the expected and predictable results would have been achieved. A method as required by claim 26 would therefore have been obvious.

As to claim 29, the belt structure (held by transfer “18”) is moved towards the support structure of drum “75” and as already noted, the distal drum half would be

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moved towards the support structure to effect the shaping. As the movement of only the distal half will clearly alter the tire centerline, and thus desired location of the belt, it would have been apparent and obvious that the relative translations would have to be correlated or proportional. With regard to claim 29 as well as claim 30, note also Frazier (esp. figs. 5-6) where it is shown that the artisan would understand that the motion of the belt transfer would have to be half that of the distal end to retain centering of the belt with respect to the tire carcass during the shaping operation. As to claim 36, the sidewalls ("side treads") would be applied axially external to the shaped carcass.

As to claim 39, Takagi discloses an apparatus for producing a tire for a vehicle wheel, comprising: a drum (75) having a distal half and a proximal half; transfer devices (18) to dispose a belt structure coaxially around a carcass structure on the drum (75), the carcass structure having a cylindrical-sleeve shape; and at least one unit for applying at least one elongated element of elastomeric material, in circumferential coils, to form at least one component of the tire (note esp. paragraph [0119] which indicates that all the rubber components, including the "side treads" (that are applied to the shaped drum (75)), as well as most other components can be formed by winding narrow ribbons); wherein the distal and proximal halves are both carried by a support structure (support for drum 75). Configuring the shaping drum where the shaping is effected by moving the distal drum half towards a relative fixed proximal drum half would have been obvious in view of Held et al., Loeffler and Frazier as detailed with respect to claim 26 above. As to claim 48, the belt structure (held by transfer "18") is movable towards the support structure of drum "75" and as already noted, the distal drum half would be

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moved towards the support structure to effect the shaping. As the movement of only the distal half will clearly alter the tire centerline, and thus desired location of the belt, it would have been apparent and obvious that the relative translations would or certainly should be correlated or proportional. With regard to claim 48 as well as claim 49, note also Frazier (esp. figs. 5-6) where it is shown that the artisan would understand that the motion of the belt transfer would have to be half that of the distal end to retain centering of the belt with respect to the tire during the shaping operation. As to claim 50, note paragraph [0038] of Takagi.

5. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) taken in view of at least one of [Held et al. (US 3,929,540), Loeffler (US 4,805,872) and Frazier (US 2,986,196)] as above, and further in view of McEvoy et al. (US 3,950,201).

Takagi carries out an angular oscillation on drum (75) to bring the carcass coincident with the belt (in carrier 18) but does not suggest a correction thereof to conform with a desired orientation. It however would have been obvious to provide a further correction capability to help assure that the carcass and belt are accurately joined. Note for example McEvoy et al. indicates an understanding in this art that there is often some shift in alignment of the carcass and belt, this leading to reduction in the quality of the produced tires (e.g. col. 1, lines 10+). To avoid such problems, McEvoy et al. suggests providing a way to detect and correct such shifts (e.g. col. 2, lines 12+). To detect and correct such shifts would therefore have been obvious to ensure a quality tire. Further, given that Takagi contemplates different drum sizes, to correlate any

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correction operation to the particular size being built (e.g. to set up the detection devices so they would be appropriately oriented, etc.) would have been obvious and lead to only the expected and predictable results.

6. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) taken in view of at least one of [Held et al. (US 3,929,540), Loeffler (US 4,805,872) and Frazier (US 2,986,196)] as above, and further in view of Ogawa et al. (US 2002/0088529).

As to claim 35, Takagi applies the tread (including by strip winding) to the belt at a separate stage prior to joining with the shaped carcass rather than applying the tread using a unit adjacent the shaped carcass shaping drum. Ogawa et al. is also directed to joining a belt(/tread) to a carcass during shaping and evidences obvious alternatives of applying a previously formed belt/tread to a carcass during shaping (e.g. figs. 1-2) and applying a belt to the carcass during shaping followed by strip winding on the shaped carcass/belt (e.g. fig. 4). To apply the tread to the shaped carcass on the shaping drum after the carcass is joined with a belt would therefore have been an obvious alternative to applying a preformed belt tread assembly as in Takagi. In such case, providing a unit to wind a strip to the shaped carcass/belt on the shaping drum as claimed would therefore have been obvious.

7. Claims 37, 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) taken in view of at least one of [Held et al. (US 3,929,540), Loeffler (US 4,805,872) and Frazier (US 2,986,196)] as above, and further in view of Loeffler et al. (US 4,314,864).



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Takagi relates to a two stage building system where the carcass is built prior to transfer to the shaping drum. It however is a well known and obvious alternative to build and shape a tire in a single stage/drum, this providing an expected advantage in terms of avoiding extra handling steps - Loeffler et al. '864 is exemplary of this understanding (e.g. col. 1, lines 46-62).

8. Claims 51-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) taken in view of at least one of [Held et al. (US 3,929,540), Loeffler (US 4,805,872) and Frazier (US 2,986,196)] as above, and further in view of Crombie (US 4,753,707).

Takagi provides an actuating unit for exchanging the positions of drums (75) by 180 degrees. Details of this actuating unit are not however provided although the general motion imparted to the drums is not considered inconsistent with being broadly described as robotized. Crombie is exemplary of a conventional actuating device to effect the type of drum movement desired by Takagi, it being obvious to use such a device. In such case, the supporting "arms" (e.g. 36 and/or 51) are appropriately driven to alter the location of the drums, such being reasonably considered a robotized arm. To provide a capability for disassembly would have further been obvious at least for servicing needs. Note also that Takagi desires an ability to exchange drums as already noted, this reasonably requiring removable association.

9. Claims 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) taken in view of at least one of [Held et al. (US 3,929,540), Loeffler (US 4,805,872) and Frazier (US 2,986,196)] and further in view of Crombie (US

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4,753,707) as applied above to claim 51, and further in view of McEvoy et al. (US 3,950,201).

Takagi carries out an angular oscillation on drum (75) to bring the carcass coincident with the belt (in carrier 18) but does not suggest a correction thereof to conform with a desired orientation. It however would have been obvious to provide a further correction capability to help assure that the carcass and belt are accurately joined. Note for example McEvoy et al. indicates an understanding in this art that there is often some shift in alignment of the carcass and belt, this leading to reduction in the quality of the produced tires (e.g. col. 1, lines 10+). To avoid such problems, McEvoy et al. suggests providing a way to detect and correct such shifts (e.g. col. 2, lines 12+). To detect and correct such shifts would therefore have been obvious to ensure a quality tire. Further, given that Takagi contemplates different drum sizes, to provide a capability to correlate any correction operation to the particular size being built (e.g. to set up the detection devices so they would be appropriately oriented, etc.) would have been obvious and lead to only the expected and predictable results.

10. Claims 27, 28 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Also, claims 41-47 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Although it is known in general to translate a support structure of a shaping drum (e.g. Loeffler et al. US 4,314,864), this is not movement that satisfies the noted claims - the closest prior art, then, does not teach or render obvious a method as defined in claim 26/27 or apparatus as defined in claims 39/41.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Geoffrey L. Knable/  
Primary Examiner, Art Unit 1791

G. Knable  
June 19, 2009